# PROFESSIONAL ENGINEER

Official Publication of American Association of Engineers

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North Idaho Student Chapter A.A.E.

Reading from left to right: Wayne A. Nyre, Treasurer, No. Dakota Student Chapter, A.A.E., Alvah P. Rhoades, Vice Pres.; Kenneth L. Patton, President; William H. Tangen, Secretary, and Dexter H. Moser, College Adviser, and Member A.A.E. Sitting from left to right: Tom Miller, Idaho Highway Location Engineer; L. D. Brownson, City Engineer, Oeur d' Alene, Idaho, guest speakers at the chapter's first dinner meeting this school year.

Vol. 44 No. 4

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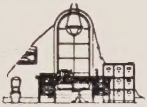

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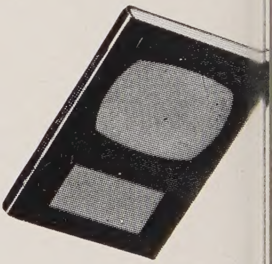

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ANSWERS TO QUESTIONS

# Unity in the Profession

*A.A.E.'s long fight against segmentation of the profession, particularly against the trend toward dis-unity initiated by the Wagner Labor Relations Act.*

Second Installment
History A.A.E. 1933-1959

Unity in the profession was the primary aim of American Association of Engineers when it was founded in 1915. It was basic to the achievement of all other purposes of the Association. The history of A.A.E., published in Professional Engineer serially in 1933-1934, shows how practicable such an achievement seemed in the tumultous days when the Association was growing like Jack's beanstalk, absorbing local and state societies of engineers, but, as it later became apparent, failing to assimilate them. Two forces, one internal, one external, halted its headlong progress toward unification of engineering in an inclusive, democratic association dedicated to improvement of the social and economic status of engineers.

The first was dissension within the Association over the relative merits of two plans: a well-financed, strongly centralized administration to further the Association's aims, and a decentralization of activities in which most of the organization's resources would be channeled through chapters to carry out A.A.E.'s program.

The second, or external force, of course, was the opposition of the major technical societies to the development of a single, democratic organization with activities restricted to social and economic problems which the technical societies had previously excluded from their "appropriate" field of responsibility. Shortly after A.A.E. was founded, the technical societies set up a coalition agency to function in the field of "professional" problems.

### *Cooperation*

American Association of Engineers had worked closely with the "Conference on Cooperation" and naively hoped that the aims of the organization might be realized through technical society support of or cooperation with A.A.E. The young society was shaken by the action of the technical societies when they chose to compete with, instead of support A.A.E. in a program of "welfare" activities to be carried on by a federation of engineering societies.

A.A.E. would have gladly merged with or yielded to any genuinely inclusive society devoted to furtherance of its stated aims. It has repeatedly made that offer. It cannot, however, yield to an agency which has only delegated authority or to one which excludes large segments of the profession from identification with it through restrictive membership requirements.

A.A.E. deemed it unwise to become one of the sponsors of Engineers Joint Council. The agency has only delegated powers and depends for funds on the generosity, the continued support, of the societies it represents. It has been a valuable medium through which the coalition of societies it serves can cooperate in admirable activities. It is not an inclusive society. Because it derives its funds and its authority from the sponsoring societies, and must refer all its projects to the societies for prolonged consideration, it has not the facility which A.A.E. enjoys—the power to get under way quickly and do what needs to be done in an emergency when the need is most urgent.

Perhaps the best illustration of the impediments to quick, effective action that A.A.E. would encounter in identification with EJC is the story of the publication of collective bargaining manuals sponsored by A.A.E. and EJC's Committee on Economic Status.

## *The Wagner Act*

In the years between 1937 an 1943, A.A.E.'s Mediation Committee amassed information on th operation of the Wagner Act an published a series of articles i PROFESSIONAL ENGINEER warnin engineers of the statute's restrictiv effect on their freedom of association and explaining the methods b which they might evade incorporation in heterogeneous bargainin units. It became apparent that eng neers needed a comprehensive an practical manual for guidance i defense of freedom of association Such a publication was also neede to support A.A.E.'s campaign fo amendment of the Wagner Act b furnishing concrete proof that eng neers were being included again their will in heterogeneous unit With authority from its board o directors, granted in November 1943, A.A.E. prepared TECHNOLOGISTS' STAKE IN THE WAGNE ACT, which came off the press i September, 1944.

Early in 1944, the American Institute of Electrical Engineers bega accumulating records of NLRB cases involving professional engineers. This material AIEE turne over to Dr. Waldo E. Fisher, Professor of Industry at the Wharto School of Commerce, University o Pennsylvania, to be organized an published in the form of a collectiv bargaining manual for professiona engineers. In 1945, after TECHNOLOGISTS' STAKE IN THE WAGNE ACT had been published and had bee widely used by engineering societ committees and engineers subject t the Wagner Act, The Committee on Economic Status of the Engineer, composed of representatives of the five major technical societies (constituting EJC) and of NSPE agreed to sponsor publication and distribution of the manual. This procedure involved inevitable delays, inasmuch as it had been agreed that the manual would be submitted, before publication, to each of the sponsoring societies, subject to their modification. The manual was ready for distribution in May, 1947, only a month before the Taft-Hartley Act was passed rendering obsolete much of the material in the manual dealing with engineers' status under the Wagner Act. Part I of the manual (the section published at this time) dealt entirely with the procedure of *organizing* under the Wagner Act and did not cover the problems of *bargaining* which was the field in which engineers needed guidance after the Taft Hartley Act became a law. The societies announced their intention of preparing and publishing Part II to furnish engineering "unions" information needed in bargaining. A.A.E. which had such a manual in preparation dropped the project in order to avoid duplication of effort.

## *A.A.E.'s Historic Stand On Unionism of Engineers*

Much of A.A.E.'s time and en-
rgy since the publication of its his-
ory in 1933-1934 has been spent in
lefending the integrity of the pro-
ession against involuntary union-
zation of professional engineers. It
ias made little progress toward its
oal of a single, inclusive society. It
ias, instead, been forced to use its
esources in a fight against seg-
nentation of engineering, a division
f the profession into opposing
amps, employees lined up against
mployers, in a struggle to improve
he social and economic status of
mployee-engineers which might
orever block the development of
nity. It is not an unfamiliar situ-
tion. From its inception the Asso-
iation has been forced by circum-
ances to compete with unions for
ie support of employee engineers
id thereby to preserve unity in the
rofession.

American Association of Engineers believed that the only fair way to avert unionism was to offer engineers in one great inclusive society more advantages than they could reap from union memberships. A.A.E. faced the facts—openly stated that the men who were joining unions were doing it because they were shamefully underpaid in comparison with unskilled labor (unionized) and that they were receiving salaries sadly out of line with increased living costs. Some of the most eminent engineers in America recognized the validity of both theses and joined A.A.E. to lead the fight against unionism of professional workers by promoting their social and economic welfare.

In specific campaigns to raise the salaries of engineers employed by the railroads, engineers in certain state highway departments, and teachers in engineering schools, they proved that an inclusive society could "bargain collectively" for its members effectively, but without violation of principles of professional conduct. The technique of bargaining which they used was a typically engineering method. There were no threats; there was no effort to intimidate. The Association's leaders simply presented well organized, incontrovertible facts. The whole profession owes these pioneers a debt of gratitude for the procedure which they developed and which has been used ever since by engineering societies. The profession is also indebted to A.A.E.'s pioneers for having halted the movement to unionize engineers at that time.

Not until the dismal '30's, the days of the depression, was unionism again a real threat to the integrity of the profession. During the depression, non-engineers and men with meager training and experience were given jobs on WPA projects which carried misleading engineering titles. Some of them were appointed to real engineering jobs for which they were ill-qualified. These men looked to unions to help them maintain their precarious footing in the profession.

As will be shown in another section of this story, salaries of fully professional engineers did not drop as low during the depression as the pay of men in pre-professional and sub-professional grades. When the defense program stimulated industry and brought employment to higher levels, the salaries of fully professional engineers did not rebound as rapidly as did the pay scales of their subordinates. Th fact was revealed in two survey made by A.A.E. which will be di cussed in the section of this histo entitled "Remuneration."

The ridiculously low salaries o fered beginning engineers and th inadequate pay of draftsmen, d signers, laboratory workers an others in sub-professional grades o work, during the very early '30' created a condition favorable to th growth of unions. This was th period when the Federated Arch tects, Engineers, Chemists, an Technicians (later merged wi United Office and Professio Workers which was eventua kicked out of the CIO because "red" domination) came into bei All over the country, semi-unio like the Society of Designing En neers, the Engineers Guild, barga ing units of professional enginee appeared, experimented and event ally identified themselves with maj labor unions.

## *Get in Step*

In the middle '30's A.A.E. reco nized the trend toward regiment tion. Four issues of PROFESSION ENGINEER in 1934-1935 were d voted to a series of programs f chapters which analyzed the Ne Deal and provided an extensi bibliography. This was a clear war ing to engineers that they mu quickly effect professional solidari or become helpless minoriti throughout the activities of gover ment and industry. This was th period under the National Indu trial Recovery Act when unionism was being officially encouraged and minorities of all kinds were developing into pressure groups. The editorial which announced the A.A.E. "Get in Step" programs is reproduced here and shows by explicit statement as well as by implication the urgency of engineers' need of an inclusive organization, capable of making engineering a significant factor in the forces which were then shaping our national destiny and re-shaping our institutions. Such an organization was needed to preserve the identity of engineering as a profession.*

## *A.A.E. X-Rays the Wagner Labor Relations Act*

With the passage of the Wagner Labor Relations Act and, later, the Fair Labor Standards Act, the full significance of A.A.E.'s warnings concerning regimentation soon became apparent. Engineers and their societies were utterly bewildered by the measures, uncertain of their coverage, particularly in respect to the extent of authority over professional engineers exercised by administrators of both statutes. Generally, the societies looked upon the possibility of unionization of engineers under the Wagner Act as a personal and voluntary matter. It was not at first apparent that "freedom of association", the avowed purpose of the Act, was greatly limited by the discretion of the National Labor Relations Board in respect to the scope of "appropriate" bargaining units.

In general the societies and their leaders adjured engineers to preserve professional status at all costs by refraining from joining unions. They cited compelling reasons for adjuring unionism—but at first failed to recognize the real problem, the fact that engineers could be *involuntarily* included in heterogeneous bargaining units.

Many societies favored amendment of the Wagner Act to exclude engineers from its provisions. Of course, there were some organizations and individuals who contended that unionization of the lower ranks of engineers under the Wagner Act would be beneficial to them and not significant in its effect on the profession as a whole. They contended that "Whether or not a man joins a union is an economic question for him to decide. It should have no bearing on his standing in the society." This group naturally opposed amendment of the Wagner Act to exempt engineers from its provisions.

There was yet another segment of the profession which took the snobbish stand that the profession would actually benefit by committing its sub-professionals to the unions, leaving only purely professional engineers in the fold.

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* See discussion of *Get in Step* program in section entitled *Civic Consciousness,* next issue PROFESSIONAL ENGINEER.

See *Engineering Societies and Unions* by V. T. Boughton, an address to the FAECT, reprinted in PROFESSIONAL ENGINEER, Dec. 1938, p. 13.

A.A.E., contending that the profession and the societies had a right to ask for exclusion of engineers from whatever equivocal benefits the Wagner Act offered only if they could offer something better, put its Mediation Committee to work in 1937 to investigate thoroughly the status of engineers under the Act and to ascertain possible functions of A.A.E. in relation to it. The committee reported in 1938 succinctly. That report is here reproduced in substance.

## Mediation Committee Reports Generally Accepted Conclusions

1. Engineers are definitely included in scope of the act (proved by decision in case of Allis Chalmers engineers)
2. Engineers have no other recourse at present as definite for formal "collective bargaining."
3. Engineers have been forced to ally themselves with bodies of non-engineers in order to reinforce their demands with numbers.
4. Engineering societies have so far offered no direct alternative to procedure mapped out by the National Labor Relations Act.

## Aspects of "Collective Bargaining" which the Committee left indeterminate

1. Doubtful qualification of any engineering society which includes "employer" and "employee" members to act for engineers before the National Labor Relations Board.
2. Possibility that the Act may be amended to exclude engineers.
3. General reaction of engineers to the measure—their willingness to avail themselves generally of the privilege of "collective bargaining" which involves the "threat" of mass action.

## Recommendation of the Committee

1. The Committee recommended tha A.A.E. offer to its own members onl its services as mediator—dealing direc ly with employers to secure equitab adjustment of claims of specific grou of engineers, independently, rather tha through the National Labor Relatio Board.
2. The Committee suggested as a possib future plan that A.A.E. abolish all i present membership grades and divid its membership (on basis of a compre hensive classification—if that can made by a government agency in co junction with engineering societies into two classes—employer and em ployee.
3. Create a bicameral system of operatio in which the "lower house" made up employee-engineers would be given e clusive control over all matters of s ary schedules, general employment fa tors and other matters within the jur diction of the National Labor Relatio Board, and allow this "lower hous to represent engineers in cases broug to the N.L.R.B. for adjudication. Su a plan would require that A.A.E. r cruit in membership a majority of employed engineers.

Under such a plan, the "uppe house" would draw support fro the lower in its own campaign f better compensation.

Both groups would work for ad vancement of standards of trainin in engineering schools, enactment o strong license laws and their en forcement and establishment of eth ical codes and principles of profes sional conduct, and for establish ment of a national clearing hous for engineering employment and fo constructive engineering influence i civic and governmental affairs.

Indicative of the Association concern with the impact of both th Wagner Act and Fair Labor Stand ards Act was the drastic recom mendation that A.A.E. abolish all existing membership grades and divide its membership, on basis of a comprehensive classification, into two groups, with a "lower house" made up of employee engineers and an "upper house" of employer rank engineers. It was suggested that the lower house be established in such a way that it could represent engineers before the National Labor Relations Board—possibly as a bargaining agent for employee groups, but by methods already proved both effective and consistent with principles of professional conduct.

Such a plan would be feasible only with the overwhelming support of employee engineers and the whole-hearted cooperation of employer engineers—both groups dedicated to improvement of the social and economic status of engineers and to high standards of ethics. It could be put into effect only if based on a comprehensive classification of all engineering positions, with accurate job descriptions—an undertaking so stupendous and so expensive that the Association believed it could be developed only by the Bureau of Labor Statistics. Carl Painter, then president of A.A.E. made an eloquent appeal for the classification in July, 1938, before the Western Region Local Sections Conference of A.S.C.E. at Salt Lake City. The Board of A.A.E. adopted resolutions calling on government agencies to develop comprehensive standards of classification which would create a line of demarcation between professions and trades and form the basis for licensure laws for both groups. A copy was delivered to President Roosevelt by one of the Association's directors, Donald L. Chamberlin, Washington, D. C.

Following the 1938 Board meeting, A.A.E. assigned to the Mediation Committee and its research department the task of scanning all reports from the National Labor Relations Board and from the office of the Administrator of the Fair Labor Standards Act. They were further directed to obtain summaries of decisions in all cases which might possibly involve professional employees. Findings were tabulated over a period of years. During this time, H. A. Wagner, Chairman of the Mediation Committee, periodically reported to A.A.E.'s membership through PROFESSIONAL ENGINEER the status of engineers under both statutes.

## *A.A.E.'s Mediation Committee Surveys the Field*

Among the outstanding reports were: *Status Quo and Status Quid*, PROFESSIONAL ENGINEER, December, 1940; *Reconnaissance Report*, September, 1942; an address by Mr. Wagner to the St. Joseph Valley and Chicago Sections of A.S.M.E., March, 1945, reported in PROFESSIONAL ENGINEER in June, 1945; a series of articles which appeared under caption of *Exploded Views of the Wagner Act;* "A Chart for Clinical Analysis of the Problems of Technologists (Individuals and Groups) Affected by the Wagner Act" published in the March, 1946 issue; a list of 150 NLRB cases in which technologists were involved in the September, 1946 issue.

In all these publications the Association proved three major points:

1. The Wagner Act regulates as well as "protects" self-organization.
2. The Act, therefore, permits technologists to organize only in such fashion as the NLRB finds "appropriate".
3. Organization under the Act tends to dismember the professions of engineering, architecture, and chemistry, scattering technologists through scores o heterogeneous unions in which they ar minorities.

## *Campaigning for Amendment of the Wagner Act*

Thus the Association built up an unassailable record in Professional Engineer of the Wagner Act's restrictive effect upon engineers' real freedom of association, thereby laying the foundation for its campaign to amend the statute.

### *A.A.E. Publishes Book on the Wagner Act*

The "H" bomb of the campaign was the Association's book, *Technologists' Stake in the Wagner Act,* which was discussed in the introduction to this chapter. It served a dual purpose: first, it provided the information that engineers needed to protect their freedom of association under the Wagner Act; second, it offered, with documentary evidence, proof that the Wagner Act actually restricted such freedom of association (which it ostensibly was designed to protect) and justified the demand that the Wagner Act be amended. As Congress considered a series of measures to amend the Wagner Act, A.A.E. pointed out the weaknesses in each, their inefficacy so far as they might be expected to relieve the plight of professional employees. In the hearings on the Taft-Hartley Act, A.A.E. was represented first by petitions, signed by member and non-member engineers demanding real freedom o association; and second, by a mas of published material which in orderly fashion presented concret evidence of the soundness of th profession's objections to certai features of the Wagner Act.

Soon after the passage of th Taft Hartley Act, A.A.E. publishe serially an analysis of that measur as it seemed likely to affect both employer and employee engineers. I this analysis the Association emphasized the fact that engineer should be most alert during the period when the Act was still plastic— before administrative practices ha hardened into precedents possibl unfavorable to professional employees.* A.A.E. warned that advice, rather irresponsibly given b certain other agencies left a totall wrong impression of engineers rights under the Act, indicating tha they were automatically exemp from inclusion in heterogeneou units. After this, A.A.E. felt justified in "closing its books" on th project of defending engineers freedom of association under Federal labor laws. The Mediatio Committee, however, continued t

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**Technologists' Stake in the Taft Hartley Act,* published serially in *Professiona Engineer,* issues of Dec. 1947; March 1948; June, 1948.

collect data on the activities of engineer unions organized under the Wagner and Taft-Hartley Acts. It accumulated a rather extensive file of publications issued by these groups which detailed their activities, their successes and failures in the actual procedure of bargaining, and their relationship, one with another.

It was not until 1956 that the Mediation Committee thought it worthwhile to analyze this material and ascertain the extent to which engineers have availed themselves of the right to autonomous organization conferred by the Taft Hartley Act. The Committee was particularly interested in ascertaining the results from such organization and also in learning to what degree such organization may have promoted unity among employee engineers.

### *A.A.E. Reviews the Various Engineer Unions, and Publishes its Findings*

This story was published serially in PROFESSIONAL ENGINEER in the fall and winter issues of 1956 and the spring issue of 1957. Inasmuch as the material was so recently published, it seems unnecessary to write lengthily of it here. It is almost entirely a compilation of statements made by officials of the various bargaining units and unions of engineers, architects, and chemists in their own house organs. In these excerpts one finds no evidence that unions have promoted unity. There is, instead, evidence of dissidence within bargaining units—resentment by union members of the "free riders" (those who refuse to join the union which represents them and whose representation they have been compelled to accept by majority vote) and equal resentment on the part of the "free riders" who consider themselves "captive members" of the bargaining unit.

Judged by acrimonious statements (quoted in "Engineer Unions from the Reviewing Stand") found in union publications, the gulf between employer and employee engineers is wider than it was before the two groups faced each other across the bargaining table. The "sounding board" unions and those certified as bona fide bargaining agents exhibit mutual distrust. There are rather cynical references in union publications to the sincerity of engineering societies and the agencies they have created to improve the social and economic status of engineers.

Among the "bona fide" engineering unions there is so little cohesion that they seem unable to achieve unification in a national organization. Engineers and Scientists of America (although it never at its peak could claim as members a majority of such unions) seemed to have a good chance of unifying these groups. Recent conventions indicate that engineer units cannot agree on such basic questions as membership qualifications and essential activities. ESA lost many of its largest components and they have made a number of attempts to organize a rival national union.* This is a familiar pattern. Whenever engineers seem to be on the verge of

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*Information on this subject in the next issue of PROFESSIONAL ENGINEER.

achieving unity in an organization, but before the centripetal force can reach its peak, something sets off a centrifugal action and all hope of integration vanishes. This is the distinct impression of the Mediation Committee in its study of engineer unions—the movement seems to portend no great progress in the immediate future toward unity in th profession or even in a segment o the profession.

Final instalment of the histor will appear in the next issue whe Civic Consciousness and Remuneration will be reviewed.

# *The Art of Winning Over a Grou*

**Ernest W. Fair, Boulder, Colorado**

"I'M sure it's a wonderful idea and would not only do me a great deal o good but everybody else in the profession in this area but I just haven the ability to put it over."

Was this engineer just taking the easy way out or did he have a gen ine conviction of his inability to influence his fellow men? Usually the latt reason is true but only because he believed it to be so.

There are no magic formulas for winning over a group to certain ide nor does one require special talents with which to do so. Any engine can acquire the art. There are a number of time-tested and proved pr cedures which can accomplish this regardless of the group, be it profession business, civic, social, or political. Here are a few important steps.

A certain degree of speaking ability, knowledge of what one is talkin about, self-confidence; polish and good personality are most desirable b these assets are far from necessary requirements. Even though the individual lacks one or more of the foregoing he can still successfully atta his desired purpose by developing the others, and following several suggested procedures which will help him put over his idea.

Carefully planning the seating arrangement of the group is, for example, one of those minor things which can be of great importance, an strangely enough it is the most neglected. Planning the meeting should embrace positioning of chairs around a table, desk or platform so that eac individual has an equal position, and is able to see and hear.

Selecting the most stable personality in the group and seeing that h is seated in a key spot can be of immense value. Properly located such person can help to keep the meeting in line and in order. Naturally, a littl subtle planning will be needed to greet and steer this key man to a partic lar seat where he can exercise his influence.

Another bit of pre-meeting planning is to prepare a group member i advance, (this may or may not be the key man) in order that he may stee the discussions along lines desired.

How the engineer conducts himself during a group meeting can make or break his program. Above all he must stay level-headed regardless of what others do or how the discussion may go. Keeping his head will enable him to steer the discussion in the right direction to accomplish his end. Remaining unruffled is not always easy, but it is essential in controlling group discussion and action. Furthermore, it will earn for him the respect of every individual in attendance.

It is highly important to have a prepared plan, to let the group know what the meeting is called for, the topic, etc. Too many engineers attend meetings without preparation. They fail to put over their ideas and wonder why. We must bear in mind that people regardless of educational or cultural level, do not think any more than they have to and it is therefore necessary to so arrange the discussion that thinking will become easy and spontaneous.

It is also important that once a plan has been decided upon—a subject selected—that it be followed. This is up to the speaker or the chairman. Permitting arguments to deter an audience from the preconceived program can easily wreck the whole procedure, and the purpose of the meeting will have been defeated.

Another point to remember is that it usually pays to adhere to a positive line of thought, to display confidence in the program or idea. People have a definite tendency to follow confidence and shy away from indecision of any kind. State the problem or procedure desired in clear and easily understandable terms. Get the group to restate it themselves in their own words. Keep the discussion going until someone comes up with the solution desired. Action always follows much more surely when the group believes that the solution came from within the group itself rather than having been suggested directly to them.

All facts to be put before the group must be clear and to the point and sufficient time given the audience to "chew over" what has been suggested. The speaker should keep control of the discussion and see to it that no

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other member of the group has a chance to "run with the ball," lest he run in the wrong direction.

It is seldom a wise procedure to enter into an argument with the group If an argument develops let the debate be with the group itself. Stay o the same side of the fence all through the meeting. It is much easier t guide the thinking of the group in the way one desires than if active parti cipation in any argument is followed.

Objections have to be met; they will always be present, and unless the are met and handled diplomatically, they can destroy the entire progra . . . and quickly. Usually objections are founded on misconceptions o lack of information, that is why it is important for the speaker to b specific and to know his subject. Each objection should be met with courtes and an attempt made to understand it. It is well to remember that in th mind of the engineer or member of the group his objection is valid in hi mind and it should be treated with respect.

As the meeting progresses it is a good policy for members of the audi ence and the speaker as well to take notes of what others have said. This ha a threefold purpose, i.e., it flatters the other fellow, it enables the speak or chairman to use the comment later for effective purpose and it hel to direct the discussion toward the desired end.

Finally, it is quite possible that members of the group will be questi ing in his own mind the self-interest of the speaker in the proposal or t subject. It is a human trait. If the speaker takes cognizance of this pos bility in the beginning and explains his position, a roadblock of this ki is not apt to occur.

## North Idaho Student Chapter, A.A.E.

An interesting letter from Wayne A. Nyre, Treasurer of the Nort Idaho Student Chapter, A.A.E., encloses a list of student members f the fiscal year numbering forty at this time.

"The club," writes Mr. Nyre, "holds dinner meetings once a mon to which guest speakers are invited. Invitations are also extended to eng neers in the surrounding area.

"Our field trips are made up of trips to engineering projects, industrie mines, and other interesting engineering projects. As a social function, w hold an annual Engineers' Ball, and this is usually the biggest and most en joyed school function put on by the school clubs."

## Chaffey College A.A.E. Chapter

Arthur Flum, advisor of the club, writes that the boys started th new year in good fashion, and look forward to a banner year, with evenin dinner meetings. At their first meeting this season they had the privileg of having as their guest speaker, Mr. Evan Nutt, Research Engineer for th Motorola Research Laboratories at Riverside.

He took as his subject "Engineering Problems in Space Travel," whic no doubt was extremely interesting to these future engineers.

# *Engineers . . .*

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5. Organize in local and state societies, available for counsel on technological matters considered by other civic agencies.
6. Affiliate with Chamber of Commerce in order to cooperate in initiating programs and supporting those sponsored by civic agencies.
7. Open engineering society meetings to the public when community problems are discussed.
8. Help make every dollar of taxpayer's money count for civic efficiency.
9. Be individually alert in observing smaller needs of your community.
10. Remember that every educated citizen bears a responsibility in a democracy to guide public opinion.
11. Establish close relations with service clubs, with the press, in order to fulfill this responsibility.
12. Cultivate the art of describing technological projects and their social and civic significance in terms understandable by the laity.

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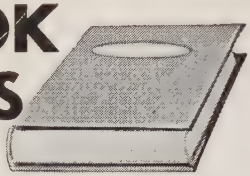

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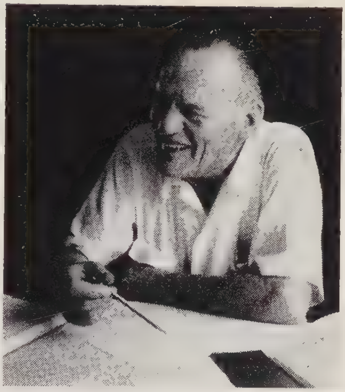

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Mr. Dunning served seven years as Director of the Arizona Department of Mineral Resources; is a member of the American Institute of Mining & Metallurgical Engineers, and the American Association of Engineers.

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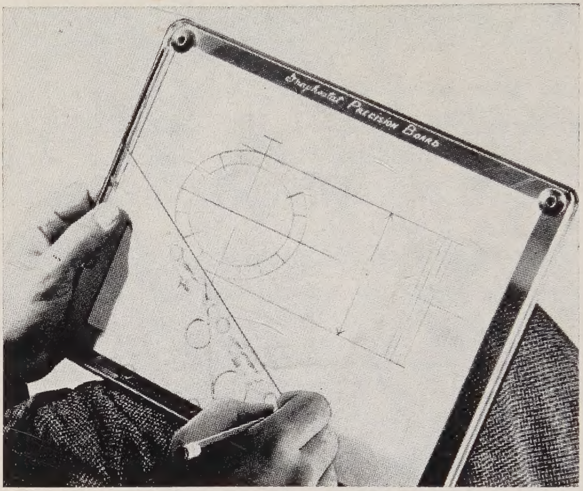

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